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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CUMMINS, INC. 11 SOUTH MERIDIAN INDIANAPOLIS, IN 46204				
EXAMINER				
HYUN, PAUL SANG HWA				
ART UNIT		PAPER NUMBER		
1797				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

indocket@btlaw.com

Office Action Summary

Application No.

10/803,396

Applicant(s)

BERRYHILL ET AL.

Examiner

PAUL S. HYUN

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 73-91 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 73-91 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SI/225)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

The amendment filed on September 28, 2009 has been acknowledged. Claims 73-91 remain pending. Applicant amended claim 73, but because the amendment was made to correct a grammatical error, the amendment did not change the scope of the claims.

Despite Applicant's arguments, the rejections are maintained.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **73, 74, 82-84, 89 and 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (US 5,394,744) in view of Scheying (US 2003/0033799 A1) and Arsenault et al. (US 6,029,044).

James et al. disclose a computer system coupled to a vehicle for monitoring various machineries of the vehicle, including the catalytic converter (see line 26, col. 3). The system comprises a sensor 11 for determining the efficiency of the converter, an averaging filter 15 that converts the sensor signal to a filtered value, and a comparator 17 that compares the filtered value to a threshold value and emits a fault signal to a diagnostic indicator if the filtered value exceeds the threshold value (see Abstract). The invention disclosed by James et al. differs from the claimed invention in that James et al. do not disclose that the claimed parameters are monitored. In addition, James et al. do not disclose the use of a second averaging filter in determining a fault value.

With respect to the parameters, Scheying discloses a system for monitoring the performance of catalytic converters. The reference discloses the need to monitor the concentration of the reagent solution supplied to a catalytic converter to optimize the efficiency of the catalytic converter (see [0004]-[0008]). The system also measures the temperature of the reagent solution (see [0018]). The system further comprises a means for detecting the amount of the reagent solution stored in the reagent supply (see [0030]). The reference discloses that the amount of reagent stored in the supply affects the concentration of the reagent delivered to the catalytic converter (see [0022]). Thus, the system determines a quality value that is based on the concentration of the reagent solution, the temperature of the reagent solution, and the amount of the reagent solution in the reservoir. The system monitors these parameters and modifies the performance of the catalytic converter in response to the measurements of these parameters. The system further comprises a heating unit for heating the reagents fed to the catalytic converter (see [0043]). In light of the disclosure of Scheying, it would have been obvious to one of ordinary skill in the art to enable the system disclosed by James et al. to monitor the parameters disclosed by Scheying et al. and modify the performance of the catalytic converter accordingly in the event that a measurement value exceeds a threshold value, including modifying the performance of the heating unit based on the measurements and the existence of any fault signals.

With respect to the second filter, Arsenault et al. disclose a system for detecting a malfunctioning signal. The system comprises two filters wherein one filter is configured to isolate noise from the signal. A comparator then compares the difference

of the output of the two filters to an upper threshold value and a lower threshold value, thereby eliminating noise from the calculation (see Abstract). It would have been obvious to one of ordinary skill in the art to provide a second averaging filter to the system disclosed by James et al. to eliminate the effects of noise.

Claims **75-81 and 85-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Scheying and Arsenault et al. as applied to claims 73, 74, 82-84, 89 and 91, and further in view of Masuda et al. (US 5,251,299).

None of James et al., Scheying and Arsenault et al. disclose the use of a fault detection timer.

Masuda et al. disclose a device for detecting system malfunction wherein the device comprises a fault detection timer that logs a fault value to a memory after a predetermined set of time, and stores the value to a memory for a predetermined length of time before it is deleted (see lines 5-20, col. 8). The fault detection timer is designed to filter out false positive signals indicating malfunction. In light of the disclosure of Masuda et al., it would have been obvious to one of ordinary skill in the art to incorporate a fault detection timer to the modified James et al. system to filter out false positive signals indicating malfunction.

Claim **90** is rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Scheying and Arsenault et al.. as applied to claims 73, 74, 82-84, 89 and 91, and further in view of Ohmura et al. (US 2002/0103583 A1).

None of James et al., Scheying and Arsenault et al. disclose a wireless transceiver.

Ohmura et al. disclose that vehicles comprising wireless transceiver for transmitting information regarding vehicle malfunction to a remote vehicle diagnostic system is well-known in the art (see [0006]). In light of the disclosure of Ohmura et al., it would have been obvious to one of ordinary skill in the art to provide the modified James et al. system with a wireless transceiver for wirelessly transmitting information regarding vehicle malfunction to a remote diagnostic system.

Response to Arguments

Applicant's arguments with respect to the claims have been fully considered but they are not persuasive.

Applicant argues that the claims are patentable over the prior art because none of the references disclose the use of two averaging filters. This argument is not persuasive. Although it is true that no one reference discloses the use of two averaging filters, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In this instance, James et al. disclose the use of an averaging filter to filter a signal, and Arsenault et al. disclose the use of a second filter to eliminate the effects of noise. The Examiner maintains the position that, when considered together, the references disclose all the limitations recited in the claims.

Applicant appears to suggest that because the disclosure of Arsenault et al. is not directed towards averaging filters, its disclosure is inapplicable to the disclosure of

James et al. This argument is not persuasive. As discussed above, Arsenault et al. disclose a system for detecting a malfunctioning signal wherein the system comprises two filters, the second filter configured to isolate noise from the signal. Although the filters disclosed by Arsenault et al. are conventional band-pass filters, the concept of using a second filter to eliminate noise as taught by Arsenault et al. is applicable to systems that utilize other types of filters, including the system disclosed by James et al. For the foregoing reasons, Applicant's argument that the claims are patentable over the prior art because none of the references disclose the use of two averaging filters is not persuasive.

Applicant also argues that the claims are patentable over the prior art because the references do not disclose the use of both "long run" and "short run" averaging filters. Applicant also argues that the limitations "long run" and "short run" were not given proper weight during examination. These arguments are not persuasive. As previously indicated, neither the claims nor the Specification define the terms "long run" or "short run". Moreover, the Specification lacks a description of how a long run averaging filter differs from a short run averaging filter (e.g. duration of time measured by each filter). Claim 73 does recite that the long run averaging filter "produces a long run average" and that the short run averaging filter "produces a short run average". However, these are insufficient definitions since the claim uses the term "long run" to define "long run" and "short run" to define "short run". In addition, the Webster's definition provided by Applicant is insufficient because a generic definition is inapplicable to the field of electronics in the context of time. For example, in the field of

electronics, a second may be considered a long time whereas the a second would be considered a short time in ordinary meaning. Without providing a definition of what time range constitutes a "long run" or "short run", or providing evidence distinguishing the averaging filter disclosed by James et al. from the claimed filters, the Examiner maintains the position that the limitations in question were properly construed.

For the foregoing reasons, the rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **PAUL S. HYUN** whose telephone number is (571)272-8559. The examiner can normally be reached on **Monday-Friday 8AM-4:30PM**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797